

Diabetes Quality

Improvements: Lessons

Learned -In-patient and

Shared Medical

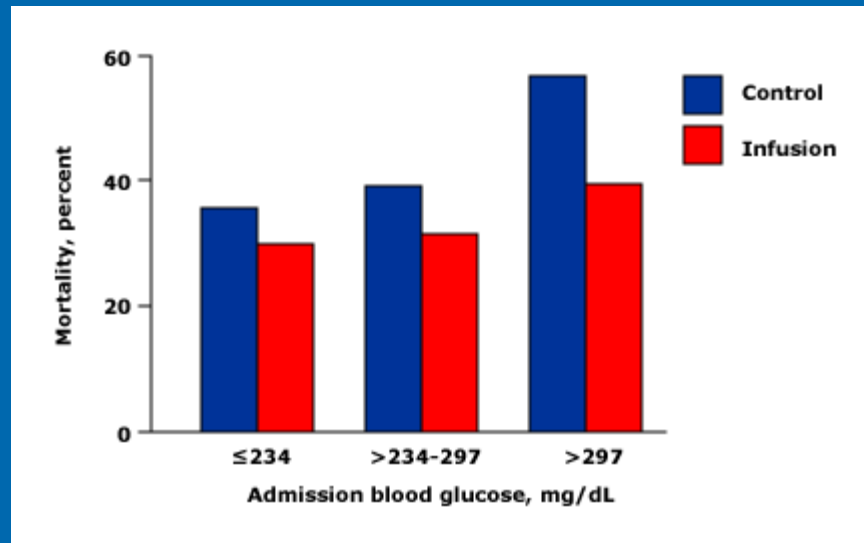
Appointments
Sharon A. Watts ND, NP CDE



Objective

- Demonstrate patient-centered care through increased knowledge and the utilization of an evidence based in-patient diabetes JACHO certification quality improvement change
- Demonstrate patient-centered care through increased knowledge and the utilization of an evidence based out-patient shared medical appointment (SMA) diabetes quality improvement change

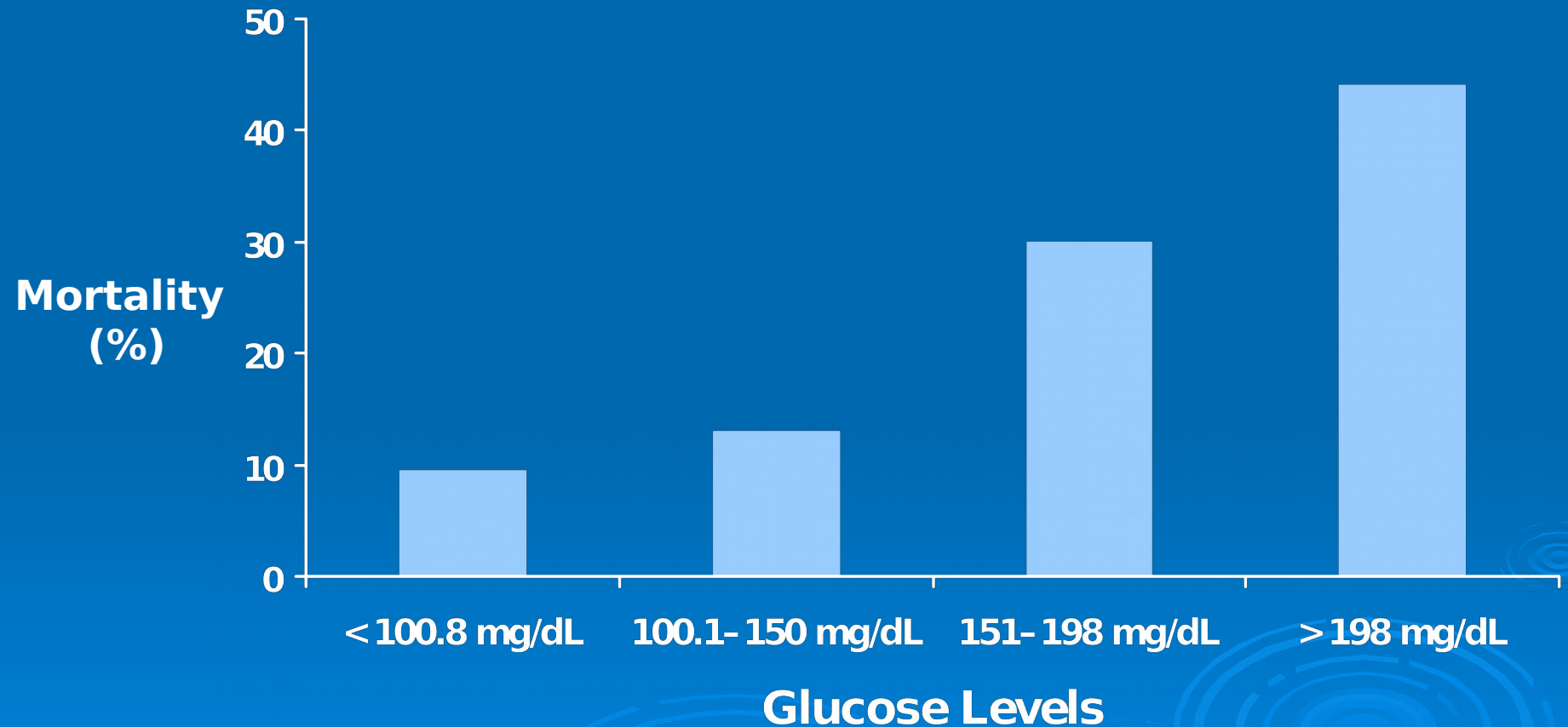
Survival Benefit with Intensive Insulin in Acute MI



The Diabetes Mellitus, Insulin Glucose Infusion in Acute Myocardial Infarction (DIGAMI) trial randomly assigned 620 diabetic patients to routine care (control group) or intensive therapy with a continuous insulin infusion. After an average of 3.4 years, the mortality in the control group was directly related to the admission blood glucose concentration. The mortality in those treated with intensive insulin was significantly reduced (33 versus 44 percent) regardless of the blood glucose value at admission.

Data from Malmberg, K, Norhammar, A, Wedel, H, Ryden, L, Circulation 1998; 98:2626

Admission Plasma Glucose Level Following Acute MI Independently Predicts 1-year Mortality Even in Absence of Diabetes N=336 Prospective ~~Non-randomized~~



MI = myocardial infarction.
Adapted from Bolck J, et al. *Int J Cardiol.* 2001;79:207-214.

Glycemic Control in Non-Critically Ill Patients

- **No definitive evidence to date of benefit of extremely tight control (ie, BG 110) for 'ward' patients**
- **Evidence that BG > 250 impairs wound healing**
- **BG > 200-250 will promote osmotic diuresis, which gives added stress to ill patients**

Intensive Insulin Therapy Reduces Wound Infection Post Cardiac Surgery

Retrospective observational and prospective experimental studies of > 2,000 patients with diabetes from single center (Portland, Oregon)

Incidence of deep sternal wound infections reduced:

3/100 in 1987

< 3/1,000 in 1997

10% increase in risk for DSWI

for every 10 mg/dl increase in blood glucose on post-op day #1

Improvement achieved with use of insulin drip protocols for 24 hours post-op.

Target BG for post-op day #1 evolved to ~110 mg/dl

Furnary et al. Continuous Intensive Insulin Infusion reduces the risk of deep sternal wound infection in diabetic patients after cardiac surgical procedures. Annals of Thoracic Surg. Vol 67, 1999.

Hyperglycemia and Risk of Infection in General Surgery and Medical Patients N=100 prospective non-randomized Observation

➤ **Glucose > 220 mg/dL on postoperative day 1 is**

- A sensitive predictor of nosocomial infection
- Associated with
 - 2.7 times higher rate of infection
 - 5.9 times higher rate of *severe* infection

Sliding Scale

Medline ® Abstract for Reference 19 of 'Management of diabetes mellitus in the acute care setti - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Mail Print Address Book Recent Links

Address <http://uptodateonline.com/utd/content/abstract.do?topicKey=diabetes/16926&refNum=19> Go

Medline ® Abstract for Reference 19
of 'Management of diabetes mellitus in the acute care setting'

19

TI Glycemic control and sliding scale insulin use in medical inpatients with diabetes mellitus.

AU Queale WS; Seidler AJ; Brancati FL

SO Arch Intern Med 1997 Mar 10;157(5):545-52.

OBJECTIVE: To identify predictors of hypoglycemic and hyperglycemic episodes in hospitalized patients with diabetes with special attention to the effectiveness of sliding scale insulin regimens. DESIGN: Prospective cohort study. SETTING: Urban university hospital. PARTICIPANTS: One hundred seventy-one adults with diabetes mellitus as a comorbid condition admitted consecutively to medical inpatient services during a 7-week period. MEASUREMENTS: Demographic, clinical, and laboratory data from inpatient medical records. MAIN OUTCOMES: Rates of hypoglycemic (capillary blood glucose, ≤ 3.3 mmol/L [≤ 60 mg/dL]) and hyperglycemic (capillary blood glucose, ≥ 16.5 mmol/L [≥ 300 mg/dL]) episodes. RESULTS: Of the patients, 23% experienced hypoglycemic episodes, and 40% experienced hyperglycemic episodes. The overall rates of hypoglycemic and hyperglycemic episodes were 3.4 and 9.8 per 100 capillary blood glucose measurements, respectively. Independent predictors of hypoglycemic episodes included African American race (relative risk [RR], 2.13) and low serum albumin level (RR, 1.92 per 100-g/L decrease); corticosteroid use was associated with a reduced risk of hypoglycemic episodes (RR, 0.32; $P < .05$). Independent predictors of hyperglycemic episodes included female gender (RR, 1.67), severity of illness (RR, 1.22 per 10 Acute Physiology and Chronic Health Evaluation III units), severe diabetic complications (RR, 2.32), high admission glucose level (RR, 1.33 per 5.5 mmol/L), admission for infectious disease (RR, 2.14), and corticosteroid use (RR, 3.74; $P < .05$). Of 171 patients, 130 (76%) were placed on a sliding scale insulin regimen. When used alone, sliding scale insulin regimens were associated with a 3-fold higher risk of hyperglycemic episodes compared with individuals following no pharmacologic regimen (RRs, 2.85 and 3.25, respectively; $P < .05$). CONCLUSIONS: Suboptimal glycemic control is common in medical inpatients with diabetes mellitus. The risk of suboptimal control is associated with selected demographic and clinical characteristics, which can be ascertained at hospital admission. Although sliding scale insulin regimens are prescribed for the majority of inpatients with diabetes, they appear to provide no benefit; in fact, when used without a standing dose of intermediate-acting insulin, they are associated with an increased rate of hyperglycemic episodes.

AD Department of Medicine, Johns Hopkins Medical Institutions, Baltimore, Md, USA.

PMID 9066459

Done Internet

Start 11 Microsoft... Patient Educ... Inpatient Di... Guidelines fo... 13 Internet... VISTA GuiMa... CPRS - Patie... 2:06 PM

Benefits of Hospital Diabetes Management Program to All Patients

‘Results from implementing this [inpatient diabetes management] program have included a reduction in the average glucose level in the medical intensive care unit through use of protocols driven to initiate intravenous insulin once the glucose level exceeds 140 mg/dL. Additionally, glucose levels have been reduced throughout the hospital, primarily because of interactions between diabetes nurse care managers and the primary care team. Associated with these lower glucose levels are a **decreased prevalence of central line infections and shorter lengths of stay**. The reduction in the length of stay for patients with diabetes has resulted in a savings of more than 2 million dollars for the year and has yielded a 467% return on investment for the hospital. ‘

JACHO-Diabetes Inpatient Certification

Inpatient Diabetes | Joint Commission - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Mail Print Internet Options

Address http://www.jointcommission.org/CertificationPrograms/Inpatient+Diabetes/ Go Links >>

Search X

HOME | SEARCH | CONTACT US | SITE MAP | CAREERS | NEWSROOM | QUALITY CHECK

The Joint Commission

SEARCH GO

ACCREDITATION PROGRAMS CERTIFICATION PROGRAMS STANDARDS PATIENT SAFETY SENTINEL EVENT PUBLIC POLICY PERFORMANCE MEASUREMENT LIBRARY ABOUT US

Printer-Friendly

[Home](#) > [Certification Programs](#) > [Inpatient Diabetes](#)

Inpatient Diabetes

Inpatient Diabetes

[Publicity Kit For Certified Organizations](#)

[Inpatient Diabetes Certification Addendum](#)
(Requires [Adobe Reader](#))

The Joint Commission's Certificate of Distinction for Inpatient Diabetes Care recognizes hospitals that make exceptional efforts to foster better outcomes across all inpatient settings. The Joint Commission and the American Diabetes Association have identified that the most successful inpatient diabetes programs possess the following critical attributes:

- Specific staff education requirements
- Written blood glucose monitoring protocols
- Plans for the treatment of hypoglycemia and hyperglycemia
- Data collection of incidences of hypoglycemia
- Patient education on self-management of diabetes
- An identified program champion or program champion team.

Achievement of certification signifies that the services you provide have the critical elements to achieve long-term success in improving

American Diabetes Association
Cure • Care • Commitment®
Criteria developed in conjunction with the American Diabetes Association

Free Teleconference
[Click here for information on an upcoming free teleconference.](#)

Done

Start 11 Microsof... Patient Educ... Inpatient Di... Guidelines fo... 13 Internet... VISTA GuiMa... CPR5 - Patie... 2:14 PM

JCAHO/ADA goals

➤ General Recommendations:

- Patients with diabetes are identified as having diabetes in the medical record at admission and at discharge
- Documentation reflect the individual's type of diabetes
- Preadmission medication list
- Nutritional screening results
- Nutritional management plan
- Degree of control prior to admission and severity of hyperglycemia on admission
- Current weight
- Current and anticipated nutritional status (NPO, etc)
- Level of comprehension and competence related to diabetes self-management activities

JCAHO/ADA goals

➤ Blood Glucose Targets:

- An A1C is drawn at the time of admission unless the results of the patients' A1C drawn within the last 60 days are known or the patient has a medical condition or has received therapy that would confound the results

➤ Preventing Hypoglycemia:-

- Plans for the treatment of hypo and hyperglycemia are established for each patient
- A plan for coordinating administration of insulin and delivery of meals is implemented
- Episodes of hypoglycemia are identified and contributing reasons for these are captured
- Contributing reasons for episodes of hypoglycemia are evaluated for systemic trends (e.g. difficulty having food trays delivered, improper ordering or timing of insulin or anti-diabetic medications, drug interactions, etc.)
- Written protocols are developed for the management of patients on intravenous insulin infusions

JCAHO/ADA goals

➤ Diabetes Care Providers:

- **The following groups working with patients with diabetes have had education specific to the management of diabetes**
 - **Dieticians, and others involved in medical nutrition therapy**
 - **Staff involved in point of care testing**
 - **Medical staff**
 - **Nursing staff including APNs**
 - **Pharmacists**
 - **Physician assistants**

JCAHO/ADA goals

➤ Diabetes Self-Management Education:

- Patients with newly diagnosed diabetes or educational deficits have at least the following educational components reflected in the plan of care
 - Medication management, including how to administer insulin (when appropriate) and potential medication interactions
 - Nutritional management, including the role of carbohydrate intake in blood glucose management
 - Exercise
 - Signs, symptoms, and treatment of hyperglycemia and hypoglycemia
 - Importance of blood glucose monitoring and how to obtain a blood glucose meter if available
 - Sick day guidelines
 - Information for who to contact in case of emergency or for more information
 - Plan for post-discharge education or self-management support

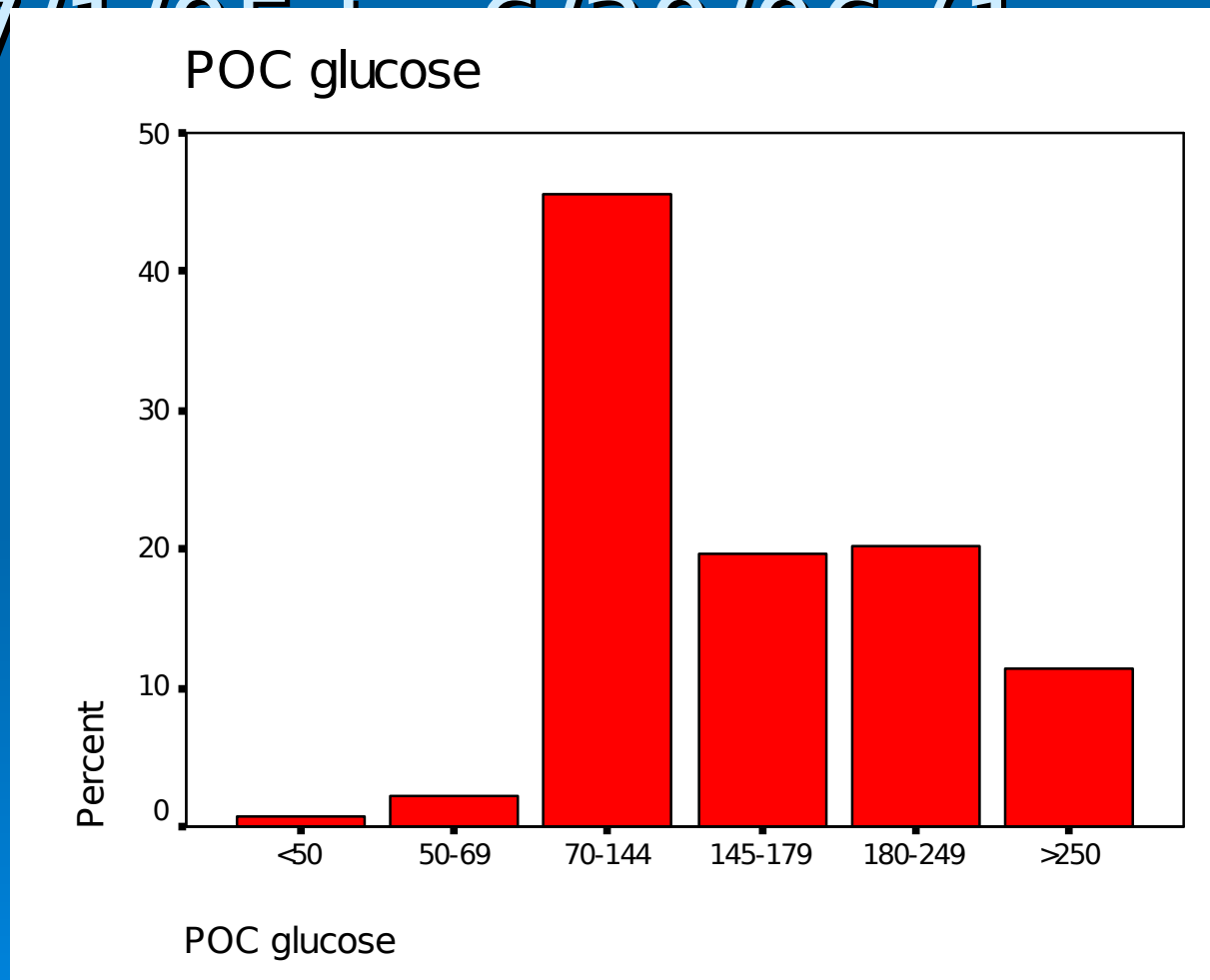
JCAHO/ADA goals

- **Medical Nutrition Therapy:**
 - Nutritional assessments are conducted for patients not consistently reaching glucose targets

- **Blood Glucose Monitoring:**
 - Written blood glucose monitoring protocols for patients with known diabetes are developed and include, at a minimum, the following:
 - Measuring blood glucose on admission
 - A plan for subsequent monitoring based on the patient's: type of DM, desired level of control, current treatment(s), comorbidities and medical illnesses
 - Dietary status including patient who are NPO
 - Results of blood glucose monitoring are available to all members of the health care team
 - The patient and the practitioner managing his or her diabetes care after discharge are informed about the patients' A1C results and any unresolved issues related to glucose management

POC glucose Wade Park inpatients

7/1/05 to 6/30/06 (1 year)



*approximately 50% of POC<50 occur on W42 or W44

How to Accomplish Improvement

- **Make sure you have a hypoglycemia protocol in place-default order when glucose test strips ordered**
- **Collect Blood glucose download data-track trends**
- **Orient Nursing on treatment of hypoglycemia**
- **Blood glucose w/in 1 hr of meal**
- **Insulin ½ hour before meals**
- **Timely download of blood glucose**
- **Nutrition-consistent carbs on menu**
 - **Full liquid 7 CHO**
 - **Regular diet 5 CHO**

How to Accomplish Improvement cont.

- In-service Nursing floors on basal/bolus insulin (insulin peak times posted in med rooms)
- In-service Units IV insulin, laminate cards
- P & T , medical committee

How to Accomplish Improvement cont.

- Medical Resident Education
- Medical Resident Charting
- Inpatient CDE RN tracking severe lows

Protocols

- Hypoglycemia
- IV Insulin Drip
- Transition from IV to SQ
- Basal/bolus
- DKA
- NPO/Clear Liquids Insulin suggestions
- Going Home suggestions for Residents

[Home](#)[Drug Info](#)[Procedures](#)[Health Forms](#)[Contact](#)
search

DM Guidelines



DM Type I and Type II Guidelines For Patients And Providers

- **Insulin Drip Protocol** - dose and rate adjustment guidelines for insulin drips
- **Homegoing Type II Guidelines** - guidelines for discharging Type II DM patients
- **NPO Clear Liquid Diet Informaton For Providers** - considerations for providers for NPO DM patients undergoing procedures
- **NPO Clear Liquid Diet Informaton For Patients** - diet instructions for patients who are NPO and undergoing procedures
- **Diabetic Ketoacidosis (DKA)** - flow chart for the treatment of diabetic ketoacidosis

Inpatient Subcutaneous Insulin Protocol Menu

Next

How to Calculate Inpatient Subcutaneous Insulin Doses

- 1) Start with 80% of Total Daily Home Dose
- 2) If not on insulin at home then estimate the total daily dose based on 0.4 UNITS/KG
- 3) In general half can be given as long acting NPH and half given as fast acting Regular
- 4) The NPH insulin dose is divided in two and given QAM and QHS
- 5) The Regular insulin dose is divided into three and given before meals
- 6) Supplemental correction insulin doses are added to the preprandial doses
- 7) If patient becomes NPO change order to 1/2 of the inpatient NPH dose and discontinue the scheduled regular insulin (If Type 1 diabetes for safety start D5W at 30 ML/HR and titrated as necessary)

Orders

>>> Basal Subcutaneous Insulin NPH QAM&HS <<<

>>> Preprandial Subcutaneous Insulin Regular TID AC <<<

Supplemental Correction Regular Insulin to be administered in addition to scheduled Regular Insulin to correct premeal hyperglycemia

>>> Low Dose Algorithm Regular Insulin Supplemental Correction <<<

(For patients requiring less than or equal to 40 total units of insulin per day or 1 to 2 antidiabetic agents at home)

>>> Medium Dose Algorithm Regular Insulin Supplemental Correction <<<

(For patients requiring 40 to 80 total units insulin per day)

>>> High Dose Algorithm Regular Insulin Supplemental Correction <<<

(For patients requiring greater than 80 units of insulin per day)

Cover Sheet Problems Orders Notes Consults Surgery D/C Summ Labs Reports

LOCK



Inbox - Microsoft Outlook

CPRS - Patient Chart

Microsoft PowerPoint - [I...

8:36 AM

Template Charting

➤ Medical Resident

➤ In-patient CDE RN



DIABETES IN-PATIENT EDUCATION (TEMPLATE)**Guidelines**

Each number would be an individual drop-down menu)

- ☐ means when checked, comment box opens

☐ **Factors Contributing to Hypoglycemia Episodes**

- ☐ Timing of food trays
 - ☐ Comments
- ☐ Timing of insulin or antidiabetic medication
 - ☐ Comments
- ☐ Increased activity
 - ☐ Comments
- ☐ Percentage of previous meal consumed
 - ☐ Comments
- ☐ Serum creatinine level
 - ☐ Comments
- ☐ Needs medication adjustment
 - ☐ Comments
- ☐ Other
 - ☐ comments

☐ **Patient was seen by this provider for individual diabetes education. The following topics were covered:**

- ☐ Patient currently has a blood glucose meter
 - ☐ Yes/Comments
 - ☐ No/Comments
- ☐ Patient has attended previous Diabetes Education classes
 - ☐ Yes /Comments
 - ☐ No/Comments

comments

☐ Patient was seen by this provider for individual diabetes education. The following topics were covered:

- ☐ Patient currently has a blood glucose meter
 - ☐ Yes/Comments
 - ☐ No/Comments
- ☐ Patient has attended previous Diabetes Education classes
 - ☐ Yes /Comments
 - ☐ No/Comments
- ☐ Reviewed symptoms of hypoglycemia (shaky, sweaty, hungry, anxious, dizzy, fatigue, irritable, headache, hunger, blurred vision)
- ☐ Reviewed 15-15 treatment rule of hypoglycemia (treat with 15 grams carbohydrate-wait 15 minutes-repeat blood glucose test, repeat process as needed if glucose still too low)
- ☐ Reviewed symptoms of hyperglycemia (thirst, nausea, blurred vision, frequent urination, dry skin)
- ☐ Reviewed treatment of hyperglycemia (medication, exercise, meal planning, monitoring)
- ☐ Reviewed exercise options
- ☐ Does patient understand basic carbohydrate counting and restricting dietary cholesterol and saturated fats?
 - ☐ Yes/Comments
 - ☐ No /Consult to nutrition
- ☐ Reviewed most recent A1C (target goal of <7%~7.9%)
 - ☐ Comments
- ☐ Reviewed blood glucose targets of 90-130 before meals, <180 2 hours after a meal, 110-150 before bedtime
- ☐ Reviewed BP target goal of 130/80 or less
- ☐ Reviewed diabetes medication
 - ☐ Yes/Comments
 - ☐ No/Comments
- ☐ Reviewed Insulin administration (correct dose, site selection, proper needle disposal, storage)
 - ☐ Yes/Comments
 - ☐ N/A
- ☐ Reviewed sick day guidelines
- ☐ Retinal imaging

- ☐ Yes
- ☐ No/ Consult placed (default to optometry consult)
- ☐ Reviewed proper foot care
- ☐ Information for who to contact in case of emergency or for more information

☐ **Education Handout (all pts new to diabetes or those w/educational deficits)**

- ☐ "Patient received "**survival skills education**" which provides patient information on diabetic medication management and potential medication interactions; diet and carbohydrate monitoring; exercise; signs, symptoms, and treatment of hypo and hyperglycemia; importance of glucose monitoring and who to contact if questions about glucose meter; sick day guidelines; information on who to contact in case of emergency or if patient would like more information; and opportunities for post-discharge education and self-management support."
-

☐ **Continuity of Care**

- ☐ Discharge planning
- ☐ Insulin administration education
- ☐ Consults.....(go to consults menu)

Going Home: Type 2 Diabetes Medications and Education

If the A1c = 7%.	If patient is not having frequent hypo glycemia that requires dose titration of medications. (Look for hypo glycemia in patient with hypoglycemic unawareness or liver failure)	Es-start previous therapy
If the A1c = 7.7-9%	<p>Consult nutrition</p> <p>Request Basic carbohydrate counting plus diabetes nutritional therapy.</p> <p>Consult Diabetes Self-Management Education</p> <p>Request Patient with A1c between 7 and 7.5%. Please invite to DDMF classes</p>	Es-start previous therapy

If A1c >= 9%	<p>For ALL</p> <p>Consult nutrition for basic carbohydrate counting plus diabetes nutritional therapy.</p> <p>If patient will be using metformin insulin (Es regular or Aspart take as) for carbohydrate counting therapy at meal.</p> <p>Consult Diabetes Self-Management Education (see below) to invite the patient to participate in DDMF classes</p>	<p>Taking one oral agent prior to snack (sulfonylurea or metformin or TED)</p> <p>Increase the dose of the oral agent as appropriate.</p> <p>And/Or</p> <p>Add SU or metformin unless contraindications (below)</p> <p>SU may be added before breakfast, supper, or both depending on glucose pattern in hospital. If in doubt add just with breakfast.</p> <p>Starting dose of glimepiride is 1.25 mg</p> <p>Starting dose of glipizide is 2.5 mg.</p> <p>For metformin start BID (with breakfast and supper) dose of 500 mg and titrate up to 1,000 mg BID as outpatient as GI side effect subsides.</p>	<p>Taking 2 oral agents prior to snack (sulfonylurea + metformin or TED)</p> <p>Increase the dose of either, or both oral agents as appropriate. If already at max doses, see below.</p> <p>Add Bedtime basal insulin (NPH)</p> <p>Start at 0.1 U/kg as bedtime (if A1c > 9%) dose, not to exceed 10 units as starting dose.</p> <p>Michelle Asberry-Smith RN, (pg. 8743) CDE is available to teach insulin administration, meal/portion, meal plans, or you can consult her to educate and start the new insulin as an outpatient if the patient is followed at Wake Forest Farms.</p> <p>Dispense the insulin and syringe with discharge medications. Use low dose syringes if doses are < 50 units.</p> <p>Place a 2 wk f/u with primary care to check and adjust insulin. Add the Diabetes Case Manager as co-rapist, if the CBOC has a case manager.</p>	<p>Taking 2 oral agents (sulfonylurea + metformin or TED) plus bedtime NPH prior to snack</p> <p>Up-titrate Hb A1c NPH insulin by 10% (small change) or 20% (large change) if the fasting glucose was > 130 mg/dL.</p> <p>It is usually safer and more effective to lower the fasting glucose to target before adding bedtime NPH or metformin.</p> <p>Place a 2 wk f/u with primary care to check and adjust insulin. Add the Diabetes Case Manager as co-rapist, if the CBOC has a case manager.</p>
--------------	---	---	--	---

If New Dx of Type 2 DM	<p>Obtain Inpatient Teaching of Glucose Meter from Michelle Asberry-Smith RN CDE.</p> <p>On weekends and IV Nurse team to instructal some meter.</p>	<p>If BMI > 35, or fasting BG > 150, or patient has dramatic lowering of glucose with small dose SU</p> <p>Start metformin 500 BID (if no contraindications) with breakfast and supper. Advise patient to advance to 1000 mg BID after 1 week if no GI</p> <p>GI</p>	<p>If BMI < 35</p> <p>Start glimepiride or glipizide as QAM before breakfast or BID with breakfast and supper.</p> <p>Starting dose of glimepiride is 1.25 mg</p> <p>Starting dose of glipizide is 2.5 mg.</p>
------------------------	--	---	---

	Relative Contraindications	Ineffective
Sulfonylurea	eGFR < 30 (with Glimepiride from Glipizide) / eGFR < 20 do not use SU	DM > 15 years
Metformin	serum creatinine > 1.5, ETOH abuse, advanced CHF, active liver disease with elevated (> 2x normal) enzymes	Type 1 DM
Exiglicazone, RF	CHF, ECGT > 3x normal limit or history of large weight gain on metformin or glimepiride or glipizide .	Type 1 DM

DKA

DKA - Microsoft Word

File Edit View Insert Format Tools Table Window Help

Type a question for help

100% Read Times New Roman 14 B I U

MANAGEMENT OF ADULT PATIENTS WITH DIABETIC KETOACIDOSIS

```

graph TD
    Start[Start IV fluid: 1 L of 0.9% NaCl/hr (15-20 mEq/hr) x 1 hour] --> IV_Fluids[IV Fluids]
    Start --> Insulin[INSULIN]
    Start --> Potassium[POTASSIUM]

    IV_Fluids --> Mild[Mild hypotension or normal (Euvolemia)]
    IV_Fluids --> Shock[Hypovolemic shock (administer 0.9% NaCl). Follow the adult resuscitation guidelines.]
    Mild --> Eval[Evaluate corrected serum Na (for each 100 mg/dL glucose > 100 mg/dL add 1.6 mEq)]
    Eval --> Na_High[Serum Na High or Normal (0.45% NaCl at 4-14 mEq/hr depending on hydration state)]
    Eval --> Na_Low[Serum Na Low (0.9% NaCl at 4-14 mEq/hr depending on hydration state)]
    Na_High --> Glucose_250[Serum glucose reaches < 250 mg/dL. Change the fluid to D5W or 5% dextrose in 0.45% NaCl at 150-250 mL/hr. Reduce the insulin infusion rate by one half.]
    Na_Low --> Glucose_250
    Shock --> Glucose_250

    Insulin --> Bolus[BOLUS Insulin Regular 0.15 unit/kg IV]
    Bolus --> Continuous[Continuous infusion Insulin Regular 0.1 unit/kg/hr IV (max 5 unit/hr)]
    Continuous --> Glucose_250
    Continuous --> NoFall[If serum glucose does not fall by 50 mg/dL in the first hour double insulin infusion rate hourly until glucose falls by 50 mg/dL or to < 250 mg/dL. If need to double insulin rate more than twice call MICU follow.]
    NoFall --> Glucose_250

    Potassium --> K_Lt33[< 3.3 mEq/L]
    Potassium --> K_33to5[3.3 - 5 mEq/L]
    Potassium --> K_Gt5[> 5 mEq/L]
    K_Lt33 --> PO4_Lt15[PO4 > 1.5]
    PO4_Lt15 --> YES[YES]
    YES --> KCl_IV[40 mEq KCl IV]
    KCl_IV --> K_POT_IV[16 mmol K PO4 IV (20 mEq K) and 20 mEq KCl IV]
    K_POT_IV --> Glucose_250
    K_Lt33 --> NO[NO]
    NO --> Glucose_250

    K_33to5 --> PO4_33to5[PO4 > 1.5]
    PO4_33to5 --> YES
    YES --> KCl_IV
    KCl_IV --> K_POT_IV
    K_POT_IV --> Glucose_250
    K_33to5 --> NO
    NO --> Glucose_250

    K_Gt5 --> PO4_Gt5[PO4 > 1.5]
    PO4_Gt5 --> YES
    YES --> No_KCl[No KCl]
    No_KCl --> K_POT_IV
    K_POT_IV --> Glucose_250
    K_Gt5 --> NO
    NO --> K_POT_IV
    K_POT_IV --> Glucose_250
  
```

*Potassium (and other electrolyte) levels are critical to patient care. If K < 3.3 mEq/L, replete before initiating insulin infusion. Hypokalemia levels are critically low and rapid doses of KCl might be needed.

STANDARD LABORATORY ASSESSMENT

- Plasma glucose
- Basic metabolic panel (calculated anion gap and effective anion gap)
- Phosphorous, magnesium
- Beta-hydroxybutyrate
- Complete urinalysis with urine ketones by dipstick
- Arterial blood gas
- Complete blood count with differential
- Electrocardiography

MONITORING

- *Capillary glucose Q 1 hour
- *Basic metabolic panel, phosphorous and magnesium Q 4 hours x 1 and then Q 6 hours

Date last Care: 3/28/10/2004
 Louis Stokes VA Medical Center
 These are guidelines approved by the Endocrinology Department dated 3/5/07

Page 1 Sec 1 1/1 At 1" Ln 1 Col 1 REC TRK EXT OVR English (U.S)

Start 11 Microsoft ... 2 Microsoft Of... 3 Microsoft Of... 14 Internet Ex... VISTA GuiMail ... CPRS - Patient ... 2:37 PM

Suggestions for NPO/Clr Liquids

Suggested Instructions for NPO-Provider (2) - Microsoft Word

File Edit View Insert Format Tools Table Window Help Type a question for help

75% Times New Roman

LSCDVAMC Suggested Instructions for NPO/Clear Liquids Procedures

1. Metformin (Glucophage) should be stopped with any preps that may cause diarrhea (e.g. Go-lightly) and resumed only when patient is rehydrated and eating normally.
2. Sulfonylurea (Glyburide, Glipizide) can be given at ½ the usual dose for the day(s) patient is on clear liquid diet or NPO for procedures.
3. No Regular or Aspart (Novolog) insulin should be given on clear liquid diets or NPO orders (Type 1 Diabetes will need individual management). Insulin pump patients will need instruction from the Pump Team (Jan Anselmo, RD, Mary Beth Skala, RD, and Sharon Watts, NP).
4. Avandia (Rosiglitazone) may remain as usual dose.
5. NPH insulin should be given at ½ the usual dose on clear liquid days and NPO procedure days (with close monitoring in Type 1 diabetes).
6. Glargine (Lantus)- (if AM dosing) should be given at ½ the usual dose on clear liquid days and NPO procedure days (with close monitoring in Type 1 diabetes), (if PM dosing) should be given at ½ the usual dose the night before clear liquids/NPO to start (with close monitoring in Type 1 diabetes)

Page 1 Sec 1 1/1 At 1.2" Ln 2 Col 65 REC TRK EXT OVR English (U.S.)

Start 9 Mi... 4 Mi... SmarT... Micros... CPRS ... 2 Int... 3:22 PM

Structure of SMAs for High-Risk DM

➤ Personnel

- staff-: 1 MD, 1NP/CDE, 1 RN, 1 Pharm D, 1 Psychologist
- 15-22 patients/session

➤ Sessions

- 90 minutes length; Return visit interval: 4-8 weeks until goals achieved

➤ Group activities

- **Discussion; Review of labs**
Education

➤ Individual activities

- Medication management; referrals; progress tracking



Challenges Related to SMA

- Space
- Patient population-no show rate, adherence
- Lack of clerk support to recruit patients, reminder call for visits
- Keeping Group Discussion-"Discussion"



Louis Stokes
Cleveland Department of
Veterans Affairs Medical Center
10701 East Boulevard
Cleveland, OH 44106

Dear Veteran,

You are invited to join Dr. Susan Kirsh and other veterans for a "group diabetes visit." It's an idea that other doctors around the country have found helps them care for their patients in ways that cannot be accomplished during the usual 15- to 20-minute office visit.

Here's how it works: Dr. Kirsh and one of our nurses will visit with you and approximately 15 other veterans for about an hour and a half in a conference room here at Firm B Wade Park. During the visit, there will be time for talking with other veterans as well as education about diabetes. Then, Dr. Kirsh will spend time talking with each patient individually about health problems and concerns.

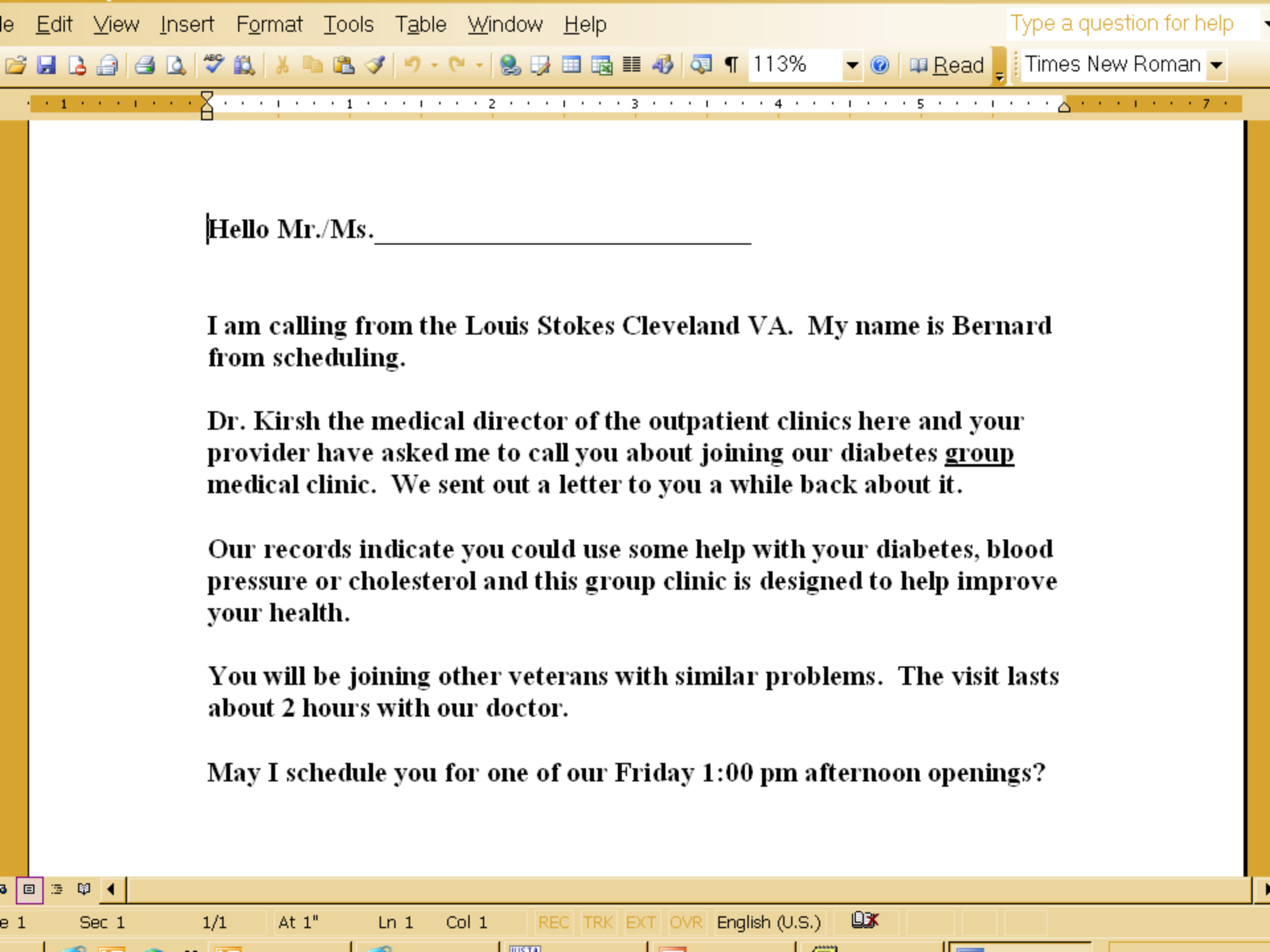
The Diabetes group visit program was set up to provide an additional opportunity for veterans having difficulty controlling their diabetes care to meet with a health care provider and to learn how to deal with their diabetes. Group visits also give veterans the opportunity to learn from other veterans who are dealing with similar health problems and to get their health needs met and their questions answered. From time to time other health professionals, such as pharmacists or health educators, may join your doctor and nurse at the visits.

When you come in for the group visit, simply check in as usual with the front desk. The receptionist will direct you to our meeting place.

We welcome your possible interest in this new opportunity for you to participate with Dr. Kirsh in your health care. Of course, if you decide not to participate, your primary provider will continue to see you at the clinic as in the past.

We meet every other Friday at 1:00 pm Firm B Conference Room Wade Park.
Call..... if you would like to schedule an appointment.

Dr. Susan Kirsh
Medical Director Firm Clinics
Wade Park



☐ RESIDENT/ATTENDING NOTE:

☒ PRIMARY CLINICIAN NOTE:
(Pharmacy, Nurse Practitioner, Advance Practice Nurse, Nurse Case Manager, etc)

☒ Verbal consent to participate in this group visit was obtained prior to scheduling.

Pt presented to Firm Diabetes Group. Topics discussed included:

- HbA1c goal <7% and the importance of glycemic control
- LDL goal <100 mg/dL and BP goal <130/80mmHg
- Complications of DM such as retinopathy, nephropathy, neuropathy, & ED
- Mood changes, obesity, exercise, and smoking cessation

Education Topics:

- Pt educated on signs/symptoms of hypoglycemia.
- Pt educated on proper medication use and possible adverse effects.
- Heart Healthy Diabetes Meal Planning reviewed by dietitian in relation to clinical goals for diabetes mellitus, hypertension, hyperlipidemia.
- Importance of goal setting in chronic care management was discussed and self-management goal was established.

Patient is a 47 year old here for follow up of Diabetes:

Number of years patient has had diabetes:

CHIEF COMPLAINT:

Active Inpatient and Outpatient Medications (including Supplies):

Issue Date

Verbal consent to participate in this group visit was obtained prior to scheduling.

Pt presented to Firm Diabetes Group. Topics discussed included:

Patient Educations: CHRONIC CARE MANAGEMENT (DIABETES), HEART HEALTHY DIABETES MEAL PLANNING, MEDICATION (INCLUDING SIDE EFFECTS), SAFE & EFFECTIVE USE OF MEDICATION, SIGNS/SYMPTOMS OF HYPOGLYCEMIA

Flag

Remote Data*

Posti

CWA

atts, Sharon A

Chan

ZZ ABC, DORIS

000-00-9182 Jan 18

All Signed Notes

New Note in Pro

May 22

All signed notes

May 21

May 18

May 18

May 18

May 16

May 14

May 10

May 10

May 10

May 09

May 09

May 09

May 08

May 05

May 04

May 04

May 04

May 03

Apr 30

Apr 26

Apr 24

Apr 17

Apr 17

Apr 16

Apr 13

Apr 13

Cover Sheet

Problem

☐ Two hours after breakfast (aka post-prandial with target range up to 180):☐ Before lunch (prior to meals with target range 90-130):☐ Two hours after lunch (aka post-prandial with target range up to 180):☐ Before dinner (prior to meals with target range 90-130):☐ After dinner (aka post-prandial with target range up to 180):☐ Hypoglycemic episodes / Hypoglycemic symptoms:☐ PHYSICAL EXAM:

ASSESSMENT/PLAN:

HYPERTENSION

- ☐ At goal with Blood Pressure < 130 mmHg/80mmHg. Continue current regimen.
- ☐ Fair Blood Pressure control, however unable to safely adjust medications due to
- ☐ Not at goal. Consider ACE-I / ARB for renoprotective effects. Consider diuretic since Diabetes patients retain sodium.

DIABETES

- ☐ At goal with A1C < 7%. Continue current regimen.
- ☐ Fair A1C control (7-7.9%), however unable to safely adjust medications due to
- ☐ Not at goal. Consider referral to Diabetes self-management classes for a "refresher" for patient/caregivers. Consider referral to Nutrition for individual instruction on carbohydrate counting.
- (Links to the CONSULTS are located below in the Consult Section)

DYSLIPIDEMIA

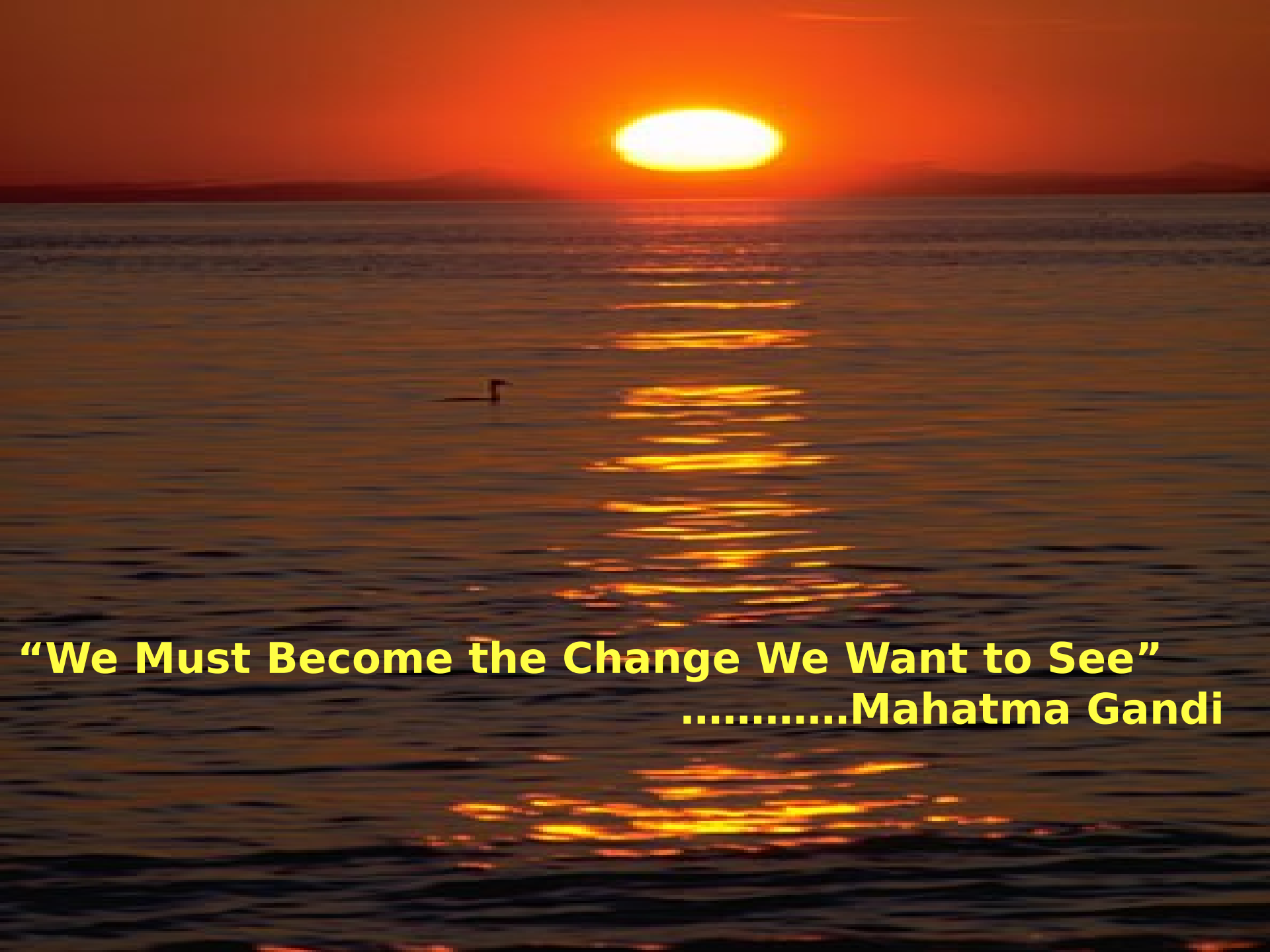
- ☐ At goal with LDL < 100mg/dl. Continue current regimen.
- ☐ Fair LDL control, however unable to adjust medications due to
- ☐ Not at goal.

☐ CONSULTS:☐ Labs

Postings

CWAD

Change...



**“We Must Become the Change We Want to See”
.....Mahatma Gandhi**